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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Assignee: Lumileds Lighting, U.S., LLC

Title: Formation Of Ohmic Contacts In III-Nitride Light Emitting Devices

Serial No.: 10/721,440 Filing Date: November 24, 2003

Examiner: Dao H. Nguyen Group Art Unit: 2818

Docket No.: LUM-9047-2P-1D

San Jose, California  
November 24, 2004

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Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR § 1.97(b)**

Dear Sir:

Pursuant to 37 C.F.R. § 1.56, § 1.97 and § 1.98, the documents listed on the accompanying forms PTO/SB/08A are called to the attention of the Examiner for the above patent application. Copies of the cited US Patent documents are not enclosed as the requirement under 37 CFR 1.98 (a)(2)(i) is waived.

U.S. Patent 6,100,586 to Chen et al. teaches at column 7, lines 13-26:

"The p-contact 230 is composed of the metal layer 134 and the composite intermediate layer 232 sandwiched between the topmost p-type gallium nitride material layer 118 and the metal layer. The composite intermediate layer 232 is composed of layers of different semiconductors... The layers of the different semiconductors are arranged in order of band-gap energy, with the Group III-V semiconductor having the highest band-gap energy next to the topmost p-type gallium nitride material layer 118, and the Group III-V semiconductor having the lowest band-gap energy next to the metal layer 134."

At column 8, lines 26-29, Chen et al. teach:

"Each of the Group III-V semiconductor layers constituting the composite intermediate layer 232 is doped with an acceptor (p-type) impurity to as high an impurity level as possible."

Chen et al. therefore do not teach a "p-type layer having a varying composition and a varying concentration of a dopant" as recited in claim 7."


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Serial No. 10/721,440

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Respectfully submitted,



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PTO/SB/08A (08-03)

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(Use as many sheets as necessary)

Sheet	1	of	1
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**Complete if Known**

Application Number	10/721.440
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Filing Date	November 24, 2003
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First Named Inventor	Werner K. Goetz
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Art Unit	2818
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Examiner Name	Thao P. Le
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Examiner Name	THISTLE
Attorney Docket Number	LUM-9047-2P-1D

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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document, by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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